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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,857	07/23/2001	Evan Hildreth	12121-002001	8772
26171	7590	07/10/2006	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			DHARIA, PRABODH M	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/909,857	HILDRETH ET AL.
	Examiner	Art Unit
	Prabodh M. Dharia	2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 May 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 3-8,11,54-67 and 99-128 is/are pending in the application.
- 4a) Of the above claim(s) 1,2,9,10,12-53 and 68-98 is/are withdrawn from consideration.
- 5) Claim(s) 3-8,11,54-67 and 99-101 is/are allowed.
- 6) Claim(s) 102-128 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 23 July 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

1. **Status:** Please all the replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 05-31-2006 under amendments and new claims have been placed of record in the file. Claims 3-8,11,54-67 and 99-128 are pending in this action. Claims 1,2, 9,10, 12-53 and 68-98 are cancelled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 102-128 are rejected under 35 U.S.C. 102(e) as being anticipated by Gordon et al. (6,661,918 B1).

Regarding Claim 102 Gordon et al. teaches a method for video-based control of an application program (Col. 1, Lines 17-23, by controlling background for a game applications or tracking people), comprising the steps of: defining a region of interest, wherein the region of interest is within a field of view of an image detector (Col. 3, Line 67 to col. 4, Line 2, Col. 4, Lines 45-51, object would be a human and detector would be a camera, interest of region would be room where human activities take place figure 1a-1c, 4a-4e); acquiring at least one image of the region of interest (Col. 3, Line 67 to col. 4, Line 2, Col. 4, Lines 45-51, background scene of a room) and a scene surrounding the region of interest (room with a furniture where a human

will walk-in Col. 3, Lines 54-63); producing a scene description based upon the at least one image (Col. 3, Lines 54-60); defining an object detection region within the region of interest based upon the scene description (Col. 4, Lines 47-49); measuring a position of an object within the object detection region (Col. 4, Lines 48-60); mapping the position of the object as a representation in the application program; and displaying the representation (Col. 9, Lines 25-43).

Regarding Claim 103 Gordon et al. teaches the steps of: measuring a change in the position of the object; interpreting the change as a gesture; mapping the gesture to the representation; and controlling the application program with the representation (Col. 9, Lines 25-41).

Regarding Claim 104, Gordon et al. teaches the step of performing a stereo image analysis on the at least one image (Col. 9, Lines 20-55).

Regarding Claim 105, Gordon et al. teaches the object is a human hand (figure 1a-1c, 4a-4e showing human hand Col. 8, Lines 58,59)

Regarding Claim 106, Gordon et al. teaches the position is expressed in a world coordinate system (Col. 4, Lines 41-43).

Regarding Claim 107, Gordon et al. teaches the position is expressed in an X-Y-Z coordinate system (Col. 9, Lines 20-25).

Regarding Claim 108, Gordon et al. teaches the region of interest is a three-dimensional region of interest (Col. 9, Lines 20-25, Col. 4, Lines 10, 41-43).

Regarding Claim 109, Gordon et al. teaches the object detection region is a three-dimensional object detection region (Col. 9, Lines 20-25, Col. 4, Lines 41-43).

Regarding Claim 110, Gordon et al. teaches controlling the application program further comprises moving a cursor (since cursor is a pointer pointing at an object the figure 4a-4e points at different part of the scene indicating person's arm or face or persons shadow controlling an application of moving image of a person through a room Col. 8, Lines 45-64).

Regarding Claim 111, Gordon et al. teaches controlling the application program further comprises selecting a control (different video portion distinguishes background from foreground to control the application program like tracking people figure 4a-4e Col. 8, lines 45-64).

Regarding Claim 112, Gordon et al. teaches interpreting the change, as a gesture is context-sensitive (Col. 3, Lines 54-63 change in color of a shirt differentiates from background color or walking on a floor in a room Col. 9, Lines 25-37, Col. 4, Lines 31-35).

Regarding Claim 113, Gordon et al. teaches defining the object detection region is based upon expected location of the object within the scene description (Col. 3, Lines 54-63).

Regarding Claim 114, Gordon et al. teaches defining the object detection region is based upon shape of the object within the scene description (Col. 9, Lines 25-37 Shoes on person's leg).

Regarding Claim 115, Gordon et al. teaches defining the object detection region is based upon pose of the object within the scene description (Col. 9, Lines 25-37, pose is walking).

Regarding Claim 116, Gordon et al. teaches defining the object detection region is based upon an anatomical model (Col. 9, Lines 25-37, Col. 3, Lines 54-63, people or person their body parts represents anatomical model).

Regarding Claim 117, Gordon et al. teaches producing the scene description further comprises the step of producing a background reference (Col. 3, Lines 54-63, Col. 9, Lines 25-37).

Regarding Claim 118, Gordon et al. teaches producing the scene description further comprises the step of cropping the background reference (Col. 1, Lines 17-23, removing background will be same as cropping background)

Regarding Claim 119, Gordon et al. teaches producing the scene description further comprises the step of clustering adjacent features in at least one image, based upon predefined criteria (Col. 5, Lines 5-26).

Regarding Claim 120, Gordon et al. teaches defining the object detection region further comprises the step of determining object presence based upon the clustered features (Col. 5, Lines 5-31).

Regarding Claim 121, Gordon et al. teaches the scene description is a three-dimensional scene description (Col. 11, Lines 23,24, Col. 12, Lines 34,35, Col. 4, Lines10).

Regarding Claim 122, Gordon et al. teaches a system comprising: an image detector (cameras are image detectors Col. 3, line 64 to Col. 4, Line 2); a display (Col. 6, Lines 5-12); and a processor (Col. 4, lines 15,16), said processor executing an application program and a process to: define a region of interest (Col. 1, Lines 17-26), wherein the region of interest is within a field of view of the image detector, acquire at least one image of the region of interest (cameras are the image detectors Col. 3, Line 65 to Col. 4, Line 2, Col. 3, Lines 54-63, Col. 1, Lines 26-37) and a scene surrounding the region of interest, produce a scene description based upon the at least one image (Col. 1, Lines 26-37), define an object detection region within the region of interest based upon the scene description (Col. 3, line 55 to Col. 4, Line 2), , measure a position of an object within the object detection region, map the position of the object as a representation

in an application program, and display the representation (Col. 4, Lines 48-60, Col. 9, Lines 25-43).

Regarding Claim 123, Gordon et al. teaches processor further executes an application program and a process to: measure a change in the position of the object; interpret the change as a gesture; map the gesture to the representation; and control the application program with the representation (Col. 1, Lines 17-42, Col. 3, Lines 54-63 change in color of a shirt differentiates from background color or walking on a floor in a room Col. 9, Lines 25-37, Col. 4, Lines 31-35).

Regarding Claim 124, Gordon et al. teaches the image detector is a stereo vision detector (Col. 4, Lines 32-34, Col. 1, lines 17-20)

Regarding Claim 125, Gordon et al. teaches the image detector is a video camera (Col. 3, Line 64 to Col. 4, Line 2)

Regarding Claim 126, Gordon et al. teaches the application program is a graphical user interface ("GUI") (Col. 1, lines 17-22).

Regarding Claim 127, Gordon et al. teaches the application program is a video game (Col. 1, lines 17-22).

Regarding Claim 128, Gordon et al. teaches the image detector is an overhead image detector (see figure 1a-1c Col. 3, Lines 54-63 and 4a-4e where detector are mounted above the head so that one sees object of human head to toe Col. 8, Lines 45-64).

Allowable Subject Matter

4. Claims 3-8,11,54-67,99-101 are allowed.

5. The following is an examiner's statement of reasons for allowance:

A stereo vision system for interfacing with an application program running on a computer, the stereo vision system comprising: first and second video cameras arranged in an adjacent configuration and operable to produce at least first and second stereo video images; and a processor operable to receive the first and second stereo video images and detect objects appearing in an intersecting field of view of the cameras, the processor executing a process to: define an object detection region in three-dimensional coordinates relative to a position of the first and second video cameras; divide the first and second stereo video images into features; pair features of the first stereo video image with features of the second stereo video image generate a depth description map, the depth description map describing the position and disparity of paired features relative to the first and second stereo video images; generate a scene description based upon the depth description map, the scene description defining a three-dimensional position for each feature; cluster adjacent features; crop clustered feature based upon predefined thresholds; analyze the three-dimensional position of each clustered feature within the object detection region to determine position information of a control object; and map the position information of the control object to a position

indicator associated with the an application program as the control object moves within the object detection region.

The prior art cited on 892's fails to recite or disclose above underlined claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

6. Applicant's arguments, see remark, filed 05-31-2006, with respect to claims amended claims 54,99 have been fully considered and are persuasive. The amendments do overcome prior art rejections.

7. Applicant's arguments filed 05-31-2006 regarding claims 102,122 have been fully considered but they are not persuasive.

Applicant argues cited reference of Gordon et al. fail recite or disclose a scene description based upon the at least one image and defining an object detection region within the region of interest based upon the scene description.

Examiner disagrees as cited reference of Gordon et al. does recite or disclose a scene description based upon the at least one image and defining an object detection region within the region of interest based upon the scene description (Col. 1, Lines 17-26, wherein the region of

interest is within a field of view of the image detector, acquire at least one image of the region of interest, where cameras are the image detectors Col. 3, Line 65 to Col. 4, Line 2, Col. 3, Line 54-63, Col. 1, Lines 26-37).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M Dharia whose telephone number is 571-272-7668. The examiner can normally be reached on M-F 8AM to 5PM.

10. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

PD

AU2629

June 30, 2006



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